



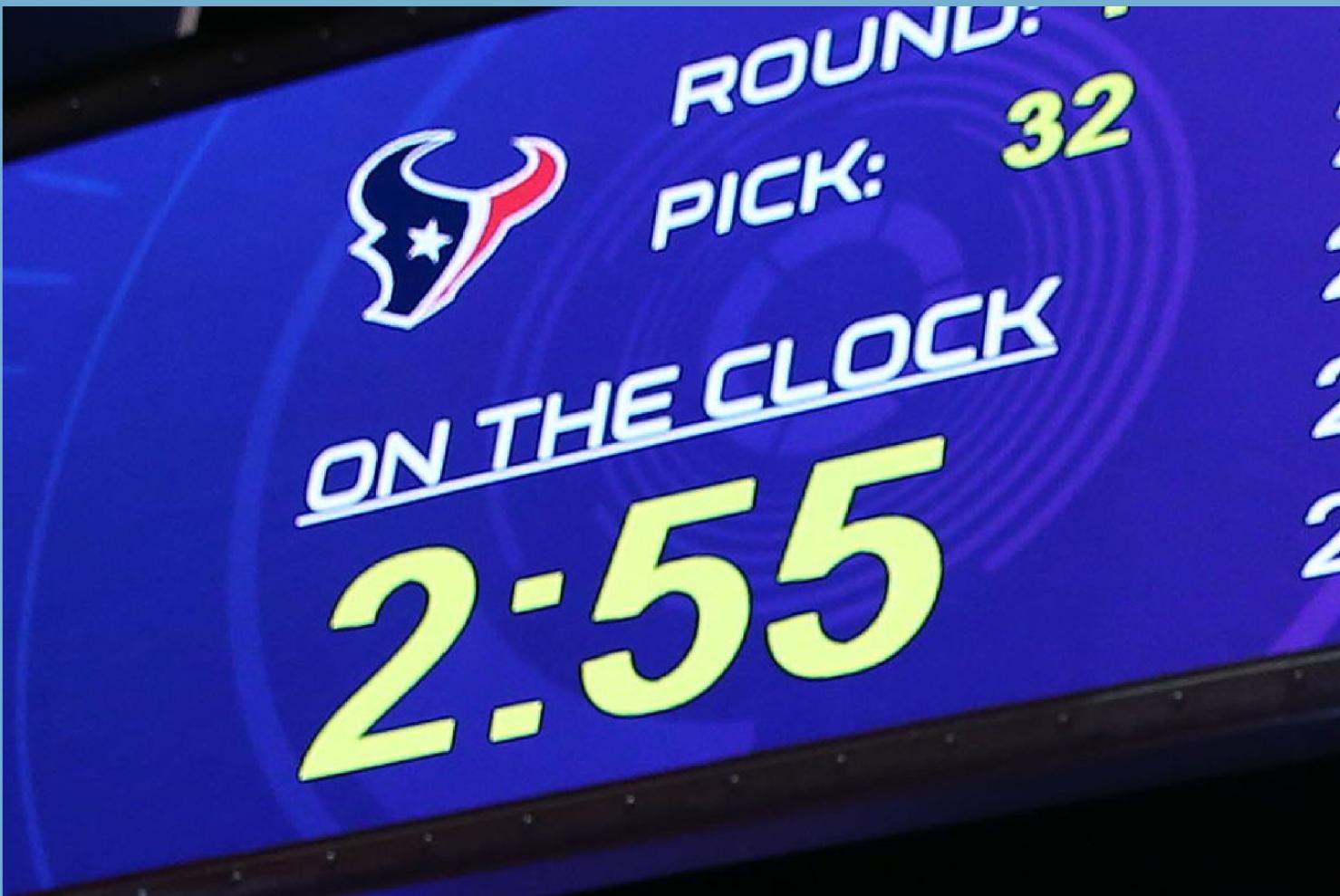
# THE NFL DRAFT

Looking at Scouting Reports, the Combine,  
and College Performance



# THE PROBLEM

- How can the NFL teams successfully predict when players will get taken in the NFL draft
  - When to make a trade
  - Tie-Breaker
- How important is the combine versus the scouting reports vs their college performance
- Where is there separation in the draft





# THE DATA

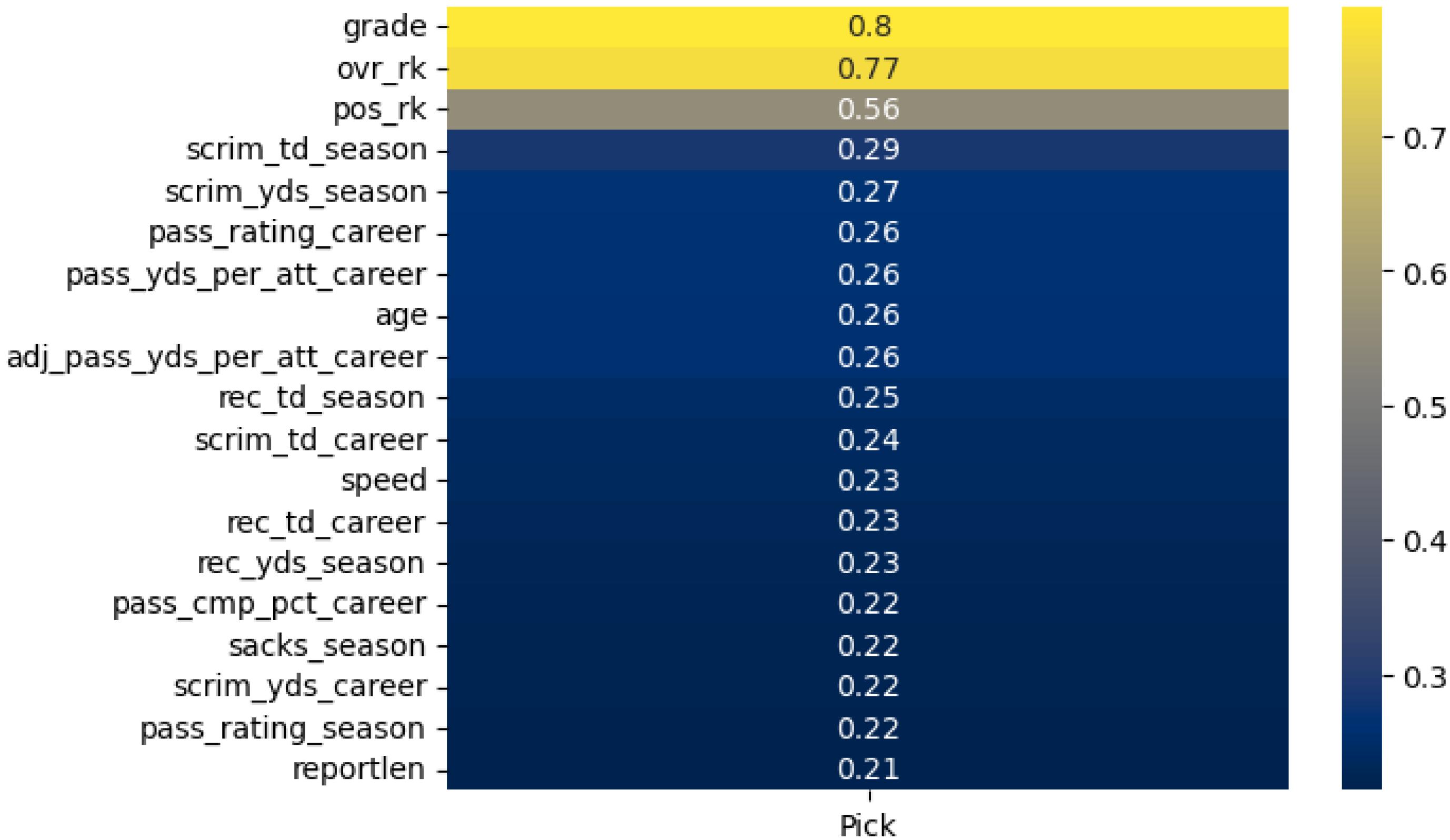
- Draft information, combine testing, and college stats web scraped from sportsreference.com
  - Scouting reports were taken from ESPN
  - Every combine and draft since 2005



# SUMMARY

- Combine performance importance
- Easier to distinguish drafted from undrafted than days 1-2 from day 3

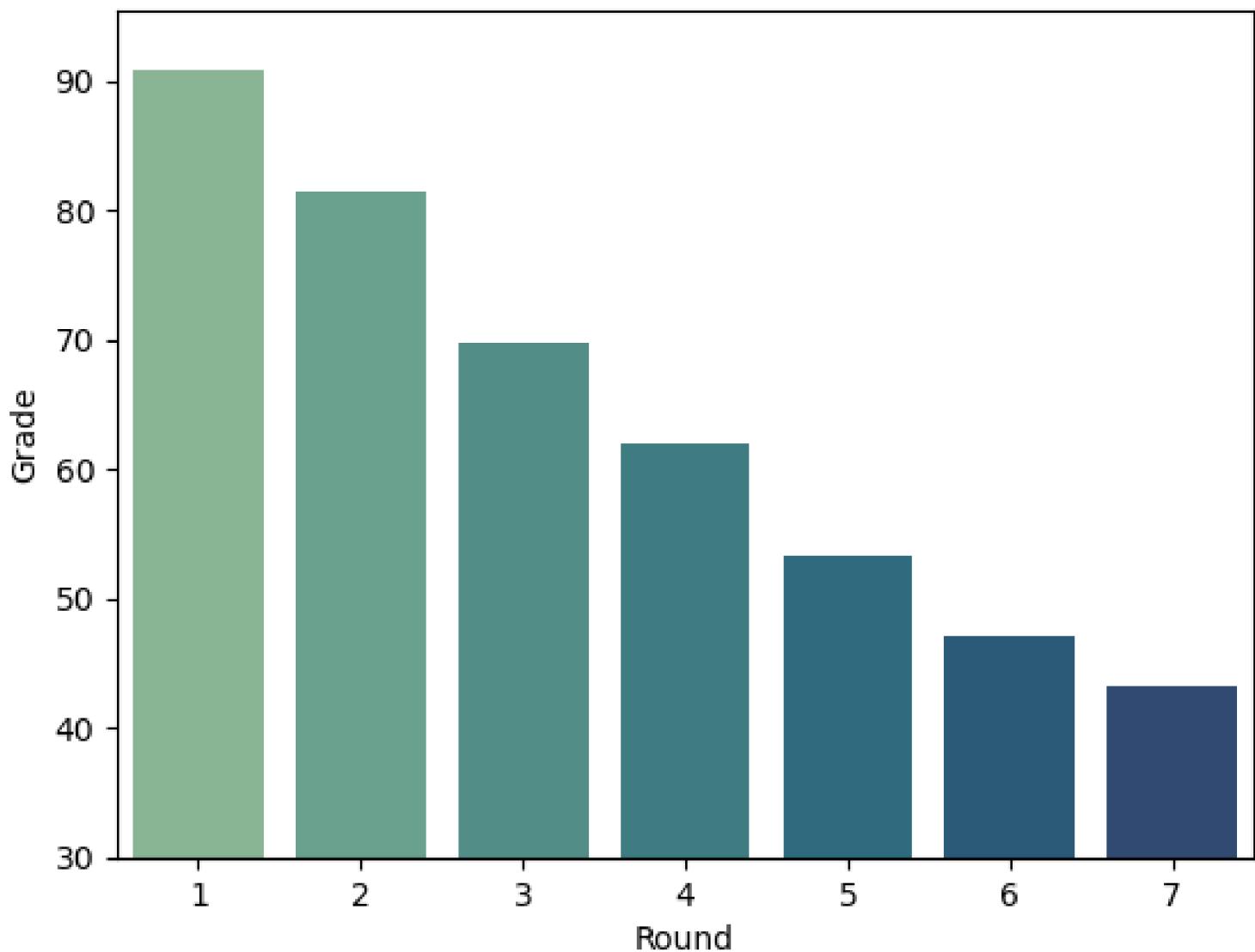
## Top Correlated Features with Pick



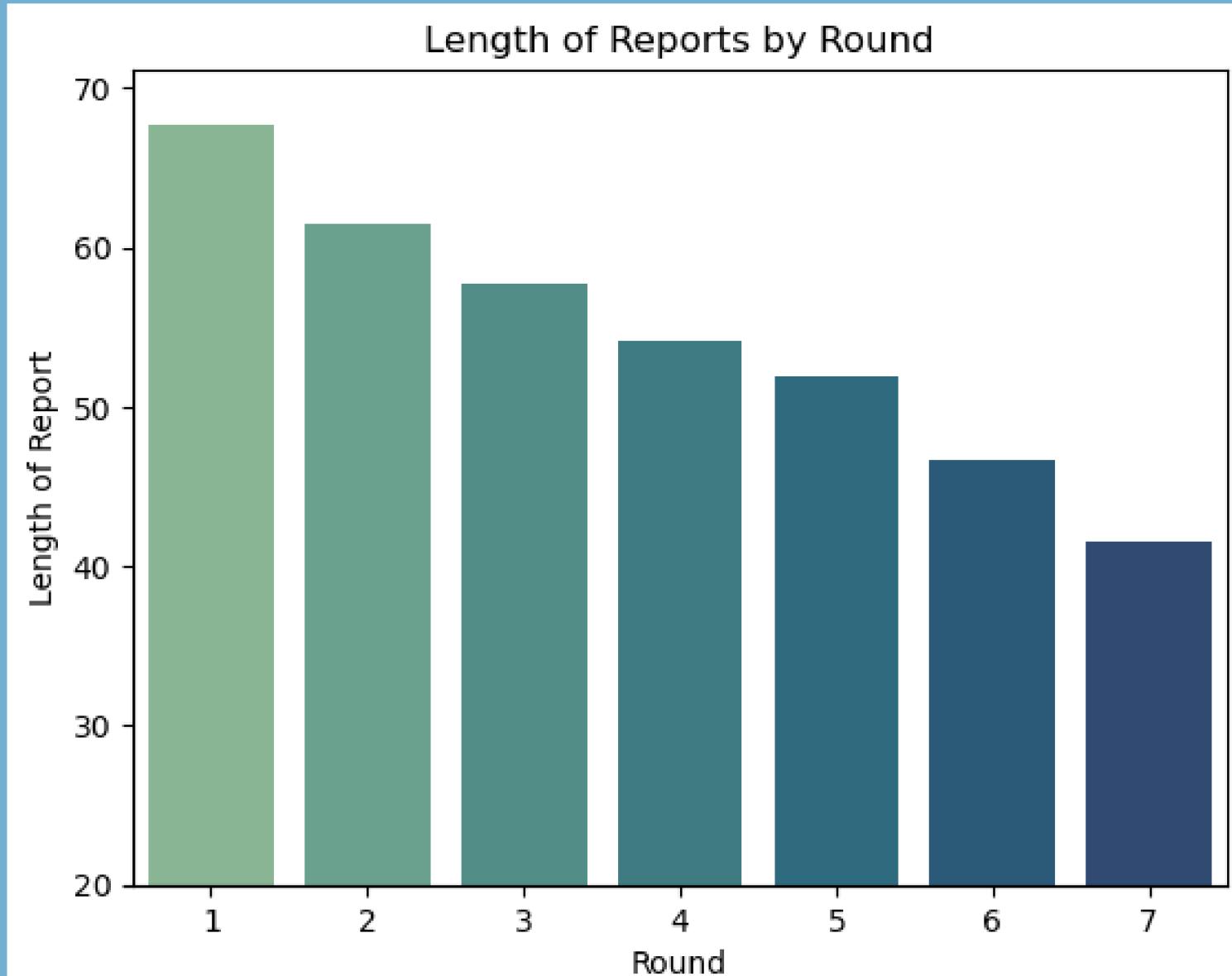


# ROUND BREAKDOWN

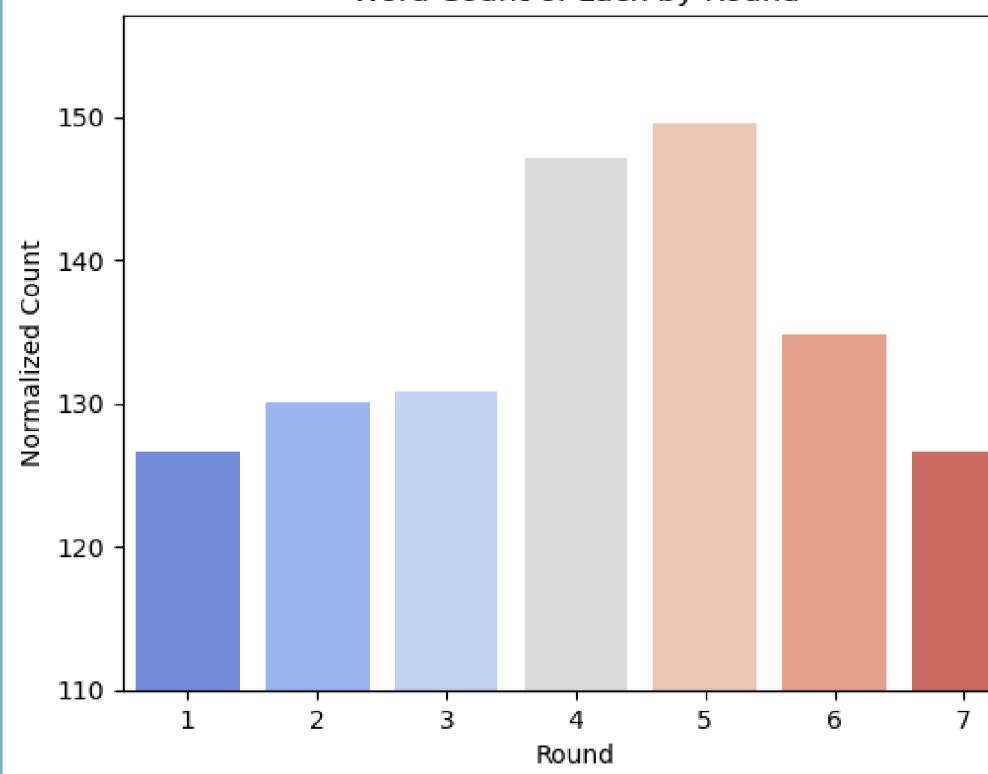
Player Grade by Round



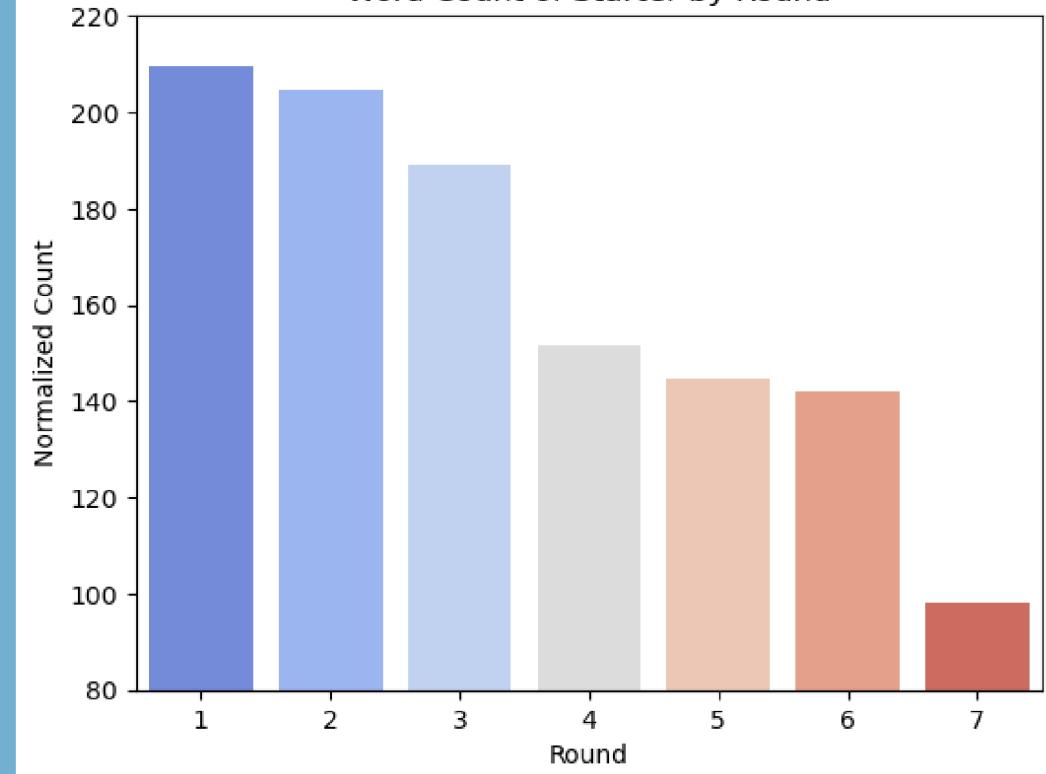
Length of Reports by Round



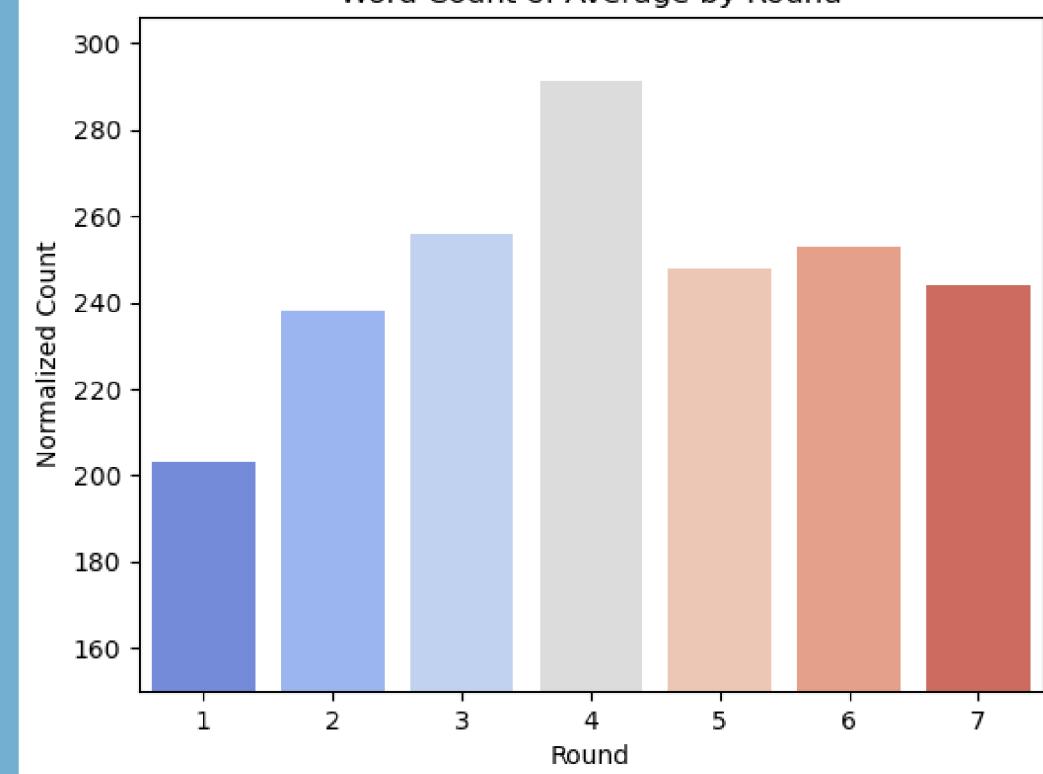
Word Count of Lack by Round



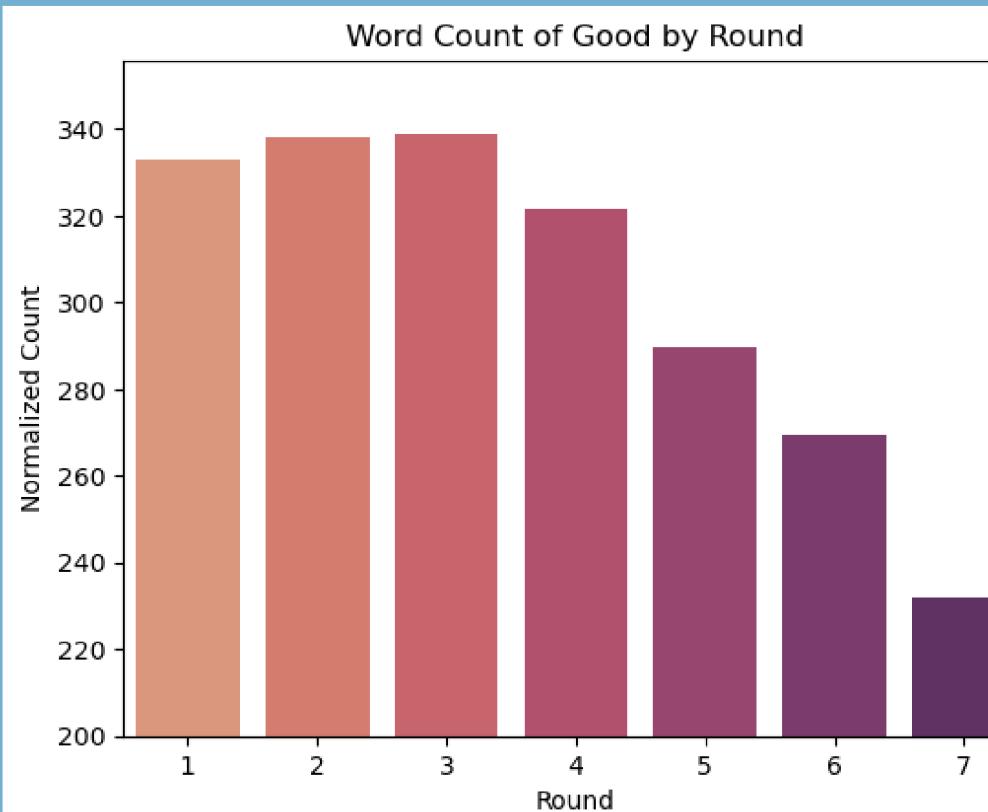
Word Count of Starter by Round



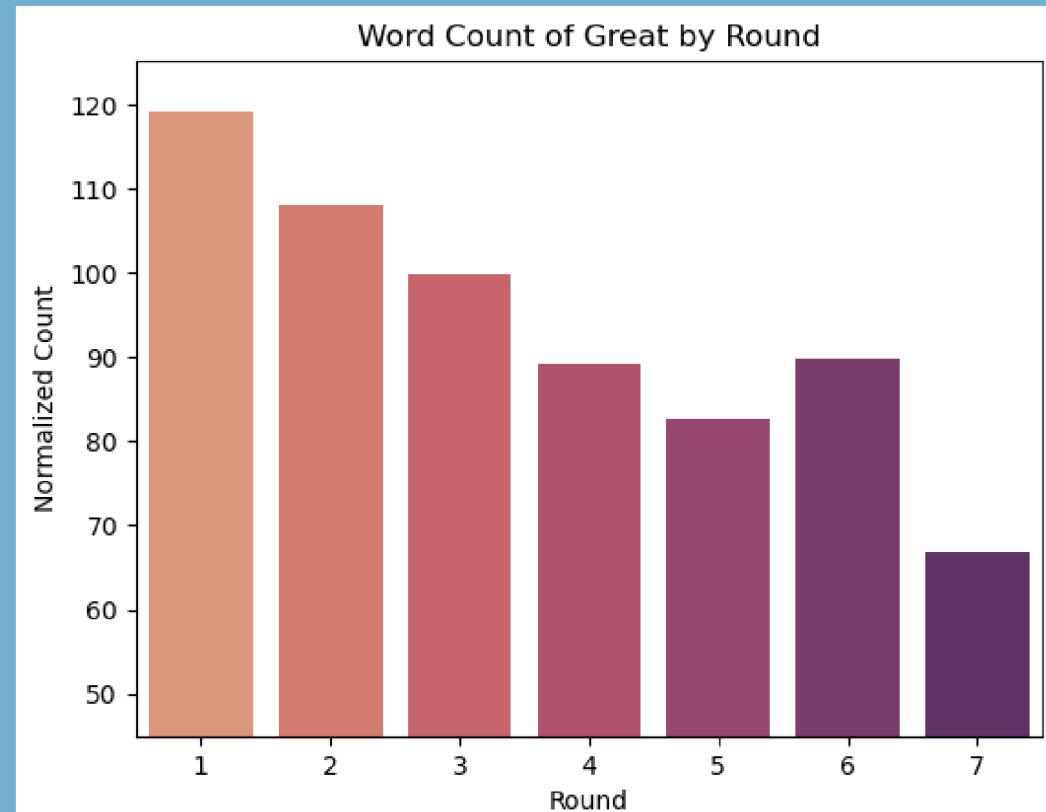
Word Count of Average by Round



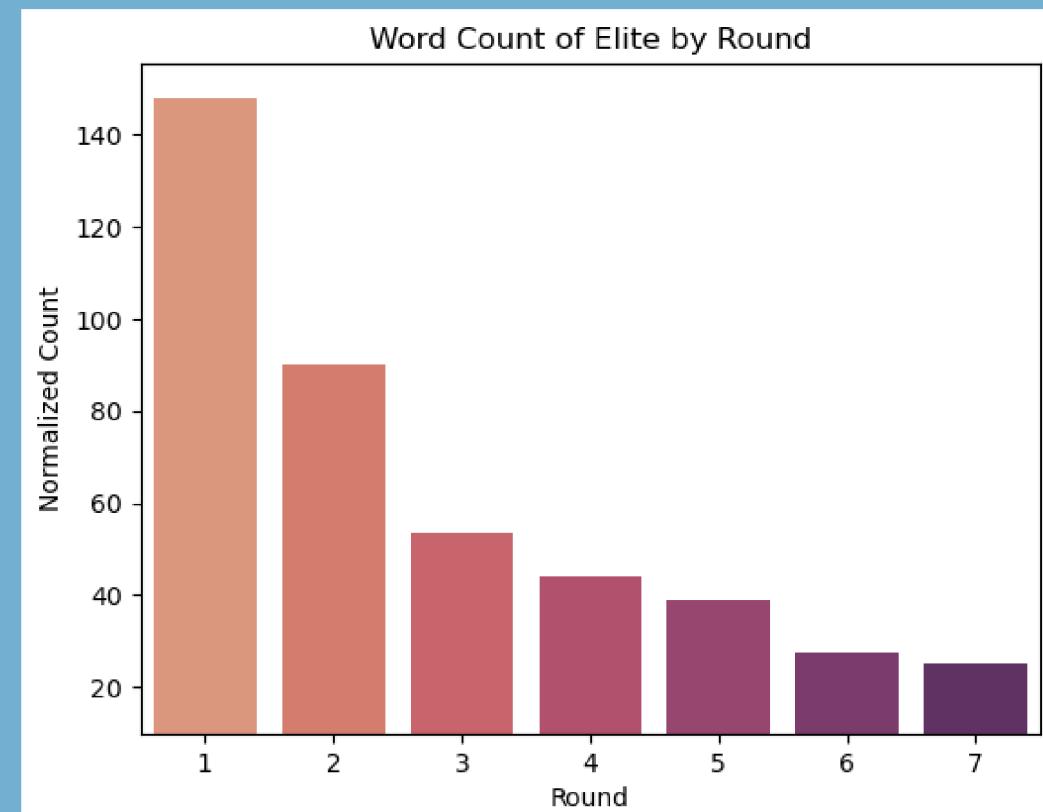
Word Count of Good by Round



Word Count of Great by Round



Word Count of Elite by Round







# MODELS



# BEST MODEL

- **Best Model:** Gradient Boost
- **Parameters:**
  - Criterion:
  - Max Depth:
  - Min Sample Leaf:
  - Min Sample Split:
  - N\_Estimators:
  - RandomOverSampler



# TOP FEATURES

Column	Weights
	0.12
	0.04
	0.04
	0.03
	0.03
	0.028



# CONCLUSIONS

- Grade and Overall Rank are the most correlated
- Lack, Average, Good, Great, Elite, and Starter among the most significant words in scouting reports
- It is easier to predict picks in the early rounds (especially round 1)
- Get more numerical data
  - Advanced stats
  - Non Primary Stats
  - More bio information
  - Spend more time feature engineering
- Medical Data
- Factor in team needs / which team is picking



# QUESTIONS?

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